

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

REMARKS

Responsive to the Office Action mailed May 22, 2003, Applicants have studied the Examiner's comments and cited art. Claims 1-6, 8-38, 40-46, 48-52 and 57-61 are currently pending. In view of the following remarks, Applicants submit the application is in condition for allowance.

Amendments

Applicants have amended the specification to correct a typographical error in a reference number identifying an element of Figure 2. The amendment does not add new matter. Applicants previously requested this amendment in the response filed August 2, 2002, but incorrectly identified the location of the changed text. The current amendment responds to the correction required by the Office Action mailed November 8, 2002.

Allowable Subject Matter

Applicants acknowledge that claims 48-52 are allowed.

Claim Objections

Claims 12 and 21 are objected to as depending from rejected base claims, but would be allowable if rewritten in independent form. Claims 12 and 21 depend from allowable claims 8 and 17, respectively, and are therefore also allowable. For this reason, Applicants respectfully request withdrawal of the objections.

Claim 2

While the Office Action summary indicates that claim 2 is rejected, the Office Action presents no grounds for rejection of claim 2. Applicants therefore request a clarification of the status of claim 2 in a future Office Action, which should be non-final, because any grounds for rejection of claim 2 will necessarily be new grounds for rejection. Claim 2 depends from allowable claim 1 and is therefore also allowable.

Claim Rejections Under 35 U.S.C. § 102

Claims 8, 17, and 25

Claims 8, 10-11, 13-17, 25 and 27-33 were rejected under 35 U.S.C. § 102(e) as being anticipated by Dye, U.S. Patent No. 6,067,098. Applicants respectfully traverse the rejections.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."¹
"Anticipation requires the presence in a single prior art reference disclosure of each and

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987).

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

every element of the claimed invention, arranged as in the claim."² The Office Action fails to show that Dye meets these fundamental criteria. Rather than finding an embodiment of every element arranged as in the claim, the Office Action picks and chooses unrelated elements from different embodiments, as shown below.

Dye is directed to a display-list based refresh system employing a graphics controller for a television system and more particularly employing the interactive media controller or integrated memory controller (IMC) 140. Dye proposes that the IMC 140 may be part of various types of systems such as the television system 53, which may be a digital television.³ The IMC 140 includes connections for coupling to a PCI bus and generates video signals for the display device 142.⁴ As shown in Figure 6, the IMC 140 includes a command and data FIFO 205 that stores display list instructions and also data transferred between the system CPU 102 of the IMC 140 and the system memory 110 external to the IMC 140.⁵ The IMC 140 further includes a display storage FIFO 244 to receive graphical data from the graphics engine 212 that is also part of the IMC 140.

In rejecting independent claims 8, 17, and 25, the Office Action only cites to figures, namely Figs. 2A, 2B, 2, 6, 3, and 20, without citing any lines of Dye. While the Office Action relies upon FIFO 244 and the memory controllers 221 and 222, none of these drawings provides the level of detail necessary to understand the exact type of data stored in FIFO 244 or the memory controllers 221 and 222. Yet, claims 8, 17, and 25 recite exactly the type of data stored in the "first frame buffer," "second frame buffer" and "memory controller" and even recite the storage scheme with respect to these limitations.

The Office Action asserts that "the claimed local bus is met by PCI/USB Fig. 2A."⁶ Dye does not consider either the PCI bus or the USB bus as local busses, but rather distinguishes local busses and peripheral busses such as PCI busses, providing separate IMC 140 interfaces for local and peripheral busses.⁷ Dye also fails to recite either the PCI bus or the USB bus of Fig. 2A as being used for transferring digital television data. Instead, Dye recites the PCI bus "may be used for coupling to various I/O devices, such as non-volatile storage, network interfaces devices, etc.,"⁸ which are conventional uses for a PCI bus. Dye nowhere recites a use for the USB bus, but merely recites the IMC 140 having an interface to a USB bus.⁹

The Office Action further asserts that "the claimed Digital television/local bus interface logic coupled to the local bus is met by the Interactive Media Controller 140, fig. 2A."¹⁰ Fig. 2A nowhere mentions a local bus. As shown above, Dye distinguishes between local busses and PCI busses, reciting different IMC 140 interfaces for each type of bus.

² *Lindemann Maschinenfabrik v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984).

³ Col. 8, lines 20-21, 26, and 35-36.

⁴ Col. 9, lines 65-66; Col. 10, lines 48-49; Col. 16, lines 24-25.

⁵ Col. 19, lines 29-31.

⁶ Paper 13, para. 3(a).

⁷ Col. 12, lines 28-32.

⁸ Col. 11, lines 21-23.

⁹ See, e.g. Col. 9, lines 51-54.

¹⁰ Paper 13, para. 3(b).

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

The Office Action further asserts that "the claimed Digital television/local bus interface logic coupled to the local bus is met by Host I/F 202, fig. 6."¹¹ Dye nowhere shows in Fig. 6 either the PCI bus or the USB bus of Fig. 2A, previously identified as the local bus, much less shows the Host I/F 202 as a local bus interface coupled to either of the PCI and USB busses. One skilled in the art would understand a "local bus interface logic coupled to the local bus" to recite an interface logic directly connected to the local bus. Dye neither shows nor describes the Host I/F 202 as either a local bus interface nor as a coupled to a local bus. Nor does Dye show the Host I/F 202 of Fig. 6 as coupled to the PCI bus or the USB bus of Fig. 2A, which is not shown in Fig. 6. Nor does Dye recite the Host I/F 202 as being a "digital television/local bus interface," as in Applicants' claimed subject matter. The Host I/F 202 instead connects between "the system CPU or peripheral core logic" and the "Command and Data FIFO 205." Dye nowhere recites the Host I/F 202 as handling digital television data. Rather, the Host I/F 202 apparently passes display list instructions and data to the Command and Data FIFO 205.¹²

The Office Action further asserts that "a local bus interface for transmitting outgoing digital television data over the local bus is met by HD_bus 207 and D_bus 2, fig. 6."¹³ First, one of ordinary skill in the art would not consider two separate busses as "a local bus interface." Further, Dye nowhere even shows the PCI bus or the USB bus of Fig. 2A in Fig. 6, which the Office Action has previously identified as the local bus, much less recites the HD_bus 207 and the Dbus2 of Fig. 6 as being an interface to the PCI bus or the USB bus. Even further, having previously argued the Host I/F 202 is the "digital television/local bus interface logic," the Office Action cannot now reasonably assert that one of the elements comprising that logic is met by two busses that are not only not part of the Host I/F logic 202, but are not even directly connected to the Host I/F logic 202. In addition, instead of "transmitting outgoing digital television data over the local bus," as in Applicants' claimed subject matter, Dye recites the HD_bus 207 as passing "command data from the Command FIFO 205" to the Instruction Decode and Execution Unit 231,¹⁴ as well as microcode instructions from the Instruction Microcode RAM 232.¹⁵ In other words, instead of "transmitting outgoing digital television data over the local bus," Dye recites the HD_bus 207 as passing commands and instructions to the Instruction Decode and Execution Unit 231.

Nor does the Dbus2 of Fig. 6 transmit outgoing digital television data over the local bus. Rather, Dye's only mention of this bus indicates "the Dbus2 is connected between the Memory Controller 222 and the HD bus."¹⁶

Dye fails to disclose first and second frame buffers for storing incoming digital television data and outgoing digital television data in an alternating manner. The Office Action treats the command and data FIFO 205 as the "first frame buffer" and the display storage FIFO 244 as the "second frame buffer." To the extent the Office Action is focusing on the "double buffering" by the IMC 140 in Dye, these FIFOs are used for

¹¹ Paper 13, para. 3(c).

¹² Col. 19, lines 24-31.

¹³ Paper 13, para. 3(d).

¹⁴ Col. 19, lines 34-41.

¹⁵ Col. 19, lines 42-48.

¹⁶ Col. 20, lines 42-47.

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

displaying video data on a display screen.¹⁷ In particular, the IMC 140 uses "foreground" buffers for a current screen refresh and "background" buffers for a subsequent screen refresh.¹⁸ Thus, there is no teaching or suggestion in Dye that its two FIFOs store incoming digital television data, much less storing incoming digital television data and outgoing digital television data in an alternating manner, as in Applicants' claimed subject matter. Nor is there any teaching or suggestion that the two FIFOs function as "frame buffers." Instead, Dye expressly teaches away from the use of frame buffers, stating that frame buffers present several problems.¹⁹ "Thus the present invention is not required to maintain, and preferably does not maintain, a single frame buffer which contains all of the video data for display on the video screen."²⁰

For at least these reasons, Applicants respectfully request withdrawal of the rejections.

Dependent Claims 10-11, 13-16, and 27-33

Dependent claims 10-11, 13-16, and 27-33 depend from allowable claims 8 and 25 and are therefore also allowable. For this reason, Applicants respectfully request withdrawal of the rejections.

Claim 57

The Office Action maintains the rejections of claims 57-61 under 35 U.S.C. § 102(e) as being anticipated by Johnson. With respect to the remarks in the Office Action repeated from the previous Office Action, Applicants incorporate the remarks in its previous Response with respect to claims 57-61. Applicants acknowledge the additional remarks from the Examiner styled as "Examiner's Response." Applicants, however, respectfully traverse those remarks for the following reasons.

As with the Office Action's handling of independent claims 8, 17, and 25, the Office Action fails to find all of the elements of Applicants' claim 57, "arranged as in the claim," but picks and choose between elements in multiple embodiments.

The Office Action suggests that the video port 150 in Johnson is a digital television/local bus interface logic because (1) the video port 150 is part of the graphics/video system 116 which is coupled to a bidirectional bus 128 that is coupled to a PCI bus 108; (2) Johnson mentions a "digital television system"; and (3) the video decoder 146 outputs a digital video signal 152 provided to the video port 150. Beginning with the first point, one of ordinary skill in the art would understand "local bus interface logic" at least to refer to logic that is directly connected to a local bus. The video port 150 cannot be "local bus interface logic" since it is not directly connected to a local bus. As shown in Figure 4 in Johnson, the video port 150 is only directly connected to a video decoder 146 and a graphics controller 154. Neither the video decoder 146 nor the graphics controller 154 is a local bus. The Office Action's view of the term "local bus interface logic" would

¹⁷ Col. 21, line 64 - Col. 22, line 11; Col. 22, lines 49-56.

¹⁸ Col. 22, lines 5-11.

¹⁹ Col. 1, line 64-Col. 2, line 29.

²⁰ Col. 5, lines 3-19.

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

stretch the term far beyond the broadest reasonable interpretation of the term. The Patent Office cannot reasonably contend that a video port 150 within a graphics/video system 116 coupled to a bidirectional bus 128 that is coupled to a PCI bus 108 is somehow directly connected to the PCI bus 108. Ironically, while the Office Action characterizes a "video port" as "digital television/local bus interface logic," one advantage of Applicants' disclosed embodiment digital television/local bus interface logic is eliminating the need for a video port cable between a graphics controller and a television tuner.²¹

The Office Action confuses a digitized analog television signal with a "digital television" signal by suggesting that the video signal 152 outputted by the video decoder 146 is a "digital television" signal. Applicant recognizes that the video decoder 146 is a digital video decoder that digitizes an analog television signal as part of its decoding.²² What the Office Action fails to appreciate is that an analog television signal that has been converted to digital form does not constitute a "digital television" signal. To the contrary, the language "digital television" has an ordinary meaning to those of ordinary skill in the art. One of ordinary skill in the art would appreciate when viewing the claims in light of Applicants' specification that a "digital television" signal is received as a digital signal by the digital television, rather than being converted by the television from an incoming analog signal.²³ That is, the incoming television signal itself is digital. Johnson does not disclose or teach interface logic for such a signal. In fact, Johnson plainly indicates that the chrominance and luminance signals are analog when received by the video decoder 146, as recognized in the Office Action.²⁴

The emphasis in the Office Action on the mere mention of a "digital television system" in Johnson does not overcome the lack of an enabling teaching of a "digital television/local bus interface logic." Even if there were an enabling teaching of a digital television system in Johnson—which there is not, that does not mean Johnson provides an enabling teaching of a "digital television/local bus interface logic."

For these reasons, Applicants respectfully request withdrawal of the rejections.

Dependent Claims 58-61

Claims 58-61 depend from allowable claim 57 and are therefore also allowable. For this reason, Applicants respectfully request withdrawal of the rejections.

Claim Rejections Under 35 U.S.C. § 103

Claims 1, 3-6, 9, 18-20, 22-24, 26, 34-38 and 40-46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dye. Applicants respectfully traverse the rejections.

²¹ Specification, p. 2, lines 27-29.

²² Col. 7, lines 20-24.

²³ Specification, p. 5, lines 14-15.

²⁴ Col. 7, lines 20-24; Paper 13, p. 18.

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

Claim 1

With respect to claim 1, Dye fails to disclose reading incoming digital television data in a first frame buffer. As shown above, the Command FIFO 205 does not store incoming digital television data, but stores commands and instructions for the Execution Engine 210.

In addition, Dye expressly teaches away from the use of frame buffers, stating that frame buffers present several problems.²⁵ "Thus the present invention is not required to maintain, and preferably does not maintain, a single frame buffer which contains all of the video data for display on the video screen."²⁶

Further, as recognized in the Office Action, Dye fails to disclose a refresh rate of incoming digital television data that is decoupled from a refresh rate of the outgoing television data. This is no surprise since Dye does not address the refresh rate of incoming television data. The passage from the Abstract of Dye cited in the Office Action merely addresses refresh with respect to outgoing video data. The only "decoupling" addressed by Dye is decoupling of data transfers between the computer system and IMC 140 using FIFO buffers 204 and 206.²⁷ According to Dye, windows and objects thereby remain in their original form and location.²⁸ The Office Action asserts that the description in the Abstract of Dye shows that "it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Dye by providing separate the refresh rate for the incoming data and transmitted data so that the display is independent of the incoming refresh rate or that the display is not influenced by the incoming data's refresh rate in order to provide a smoother and more reliable display system."²⁹ This is pure improper hindsight.

A claimed invention is not defined as simply a collection of specific elements of a claim, but is defined by the claim as a whole.³⁰ For a claim to be "obvious," the prior art must teach or suggest the *specific* combination of elements to yield the subject matter of the entire claim.³¹ It is absolutely improper to simply point out that the specific elements in claim were known, and then, using no more than the patent as a blueprint, surmise that the claimed subject matter would be "obvious."³²

The Office Action has provided no teaching or suggestion in Dye or elsewhere in the art to modify Dye as proposed by the Office Action, and fails to recognize that the proposed modification will still not yield Applicants' claimed subject matter. Because Dye teaches away from frame buffers, using a pointer-based technique where "data is not required to be moved in or out of a frame buffer," Dye, even if modified as proposed, fails to yield the claimed subject matter. Further, the Office Action has failed to show any

²⁵ Col. 1, line 64-Col. 2, line 29.

²⁶ Col. 5, lines 3-19.

²⁷ Col. 16, lines 33-38.

²⁸ Col. 13, lines 61-68.

²⁹ Paper 13, p. 10-11.

³⁰ *General Foods v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1274, (Fed. Cir. 1992).

³¹ *In re Dance*, 160 F.3d 1339, 1343 (Fed. Cir. 1998); see also *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999); *In re Rouffer*, 149 F.3d 1350, 1359 (Fed. Cir. 1998).

³² *In re Dembiczak*, 175 F.3d at 999; *In re Rouffer*, 149 F.3d at 1357.

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

suggestion in Dye to decouple an input refresh rate from an output refresh rate when Dye nowhere mentions an input refresh rate, much less recognizes a need to decouple the unmentioned refresh rate from the output refresh rate. Providing a "smoother and more reliable display system" is too broad a value statement to justify adding completely unconsidered elements, particularly when Dye recites another technique—double buffering—for smoothing the animation of moving objects on the screen.³³ Therefore, the Office Action fails to make a prima facie case for modifying Dye.

Further, the Office Action fails to recite any source in the art for the proposed modification. "If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding."³⁴ Applicants hereby request the Examiner provide support for an understanding of decoupling the input refresh rate from the output refresh rate as known in the art at the time of the invention in order to provide a smoother and more reliable display system.

Dye also fails to address "tearing"—the torn appearance of the portions of two separate frames, which is the type of problem addressed by Applicants' disclosed embodiment of decoupling recited in claim 1.

For these reasons, Applicants respectfully request withdrawal of the rejection.

Claim 40

With respect to claim 40, the Office Action contradicts its previous assertion that the HD_bus 207 of Fig. 6 is a "local bus interface logic," now asserting that the HD_bus 207 is a local bus.³⁵ The Office Action cannot have it both ways. If the HD_bus 207 is a local bus, then it cannot be a local bus interface logic as asserted with respect to claim 8. Further, the Office Action has previously asserted that the PCI/USB busses of Fig. 2A are the local bus recited by Dye. Applicants respectfully submit that the same term in two claims must be interpreted the same way.

Applicant incorporates by reference the arguments made with respect to claim 1 regarding the Office Action's modification to provide the material admittedly not taught or suggested by Dye that decouples the input refresh rate from the output refresh rate. For these reasons, Applicants respectfully request withdrawal of the rejections.

Further Dye fails to disclose "selectively providing the outgoing television data over the local bus to the graphic controller when a programmed position of the display device is refreshed." The Office Action treats the graphics engine 212 in Dye as a "graphics controller" and the host interface 202 in Dye as the "digital-television/local bus interface logic." Even from the Office Action's own perspective, the outgoing digital television data is not provided over a local bus to a graphics controller, because the graphics engine 212 is not directly connected to a local bus. Rather than considering when to provide outgoing television data over a local bus to a graphics controller, the display

³³ Col. 40, lines 50-65.

³⁴ MPEP § 2144.03(C), citing 37 C.F.R. § 1.104(d).

³⁵ Paper 13, p. 14.

Serial No. 09/191,629

Reply to Office Action of May 22, 2003

refresh technique in Dye focuses on manipulating video data without moving data to the system memory 110.³⁶

For these additional reasons, Applicants respectfully request withdrawal of the rejection.

Dependent Claims 3-6, 9, 18-20, 22-24, 26, 24-38, and 41-46

Claims 3-6, 9, 18-20, 22-24, 26, 24-38, and 41-46 depend from allowable claim 1, 8, 17, 25, and 40 and are therefore also allowable. For this reason, Applicants respectfully request withdrawal of the rejections.

Claim 44

Further regarding claim 44, the graphics engine 212 in Dye does not provide the claimed feedback signal. The passage in column 58 of Dye cited in the Office Action instead relates to stopping the graphics engine 212 on a "logical bound" to transfer video data from the system memory 110 to the video monitor 142. This is hardly suggestive of a feedback signal for determining when to provide outgoing digital television data over a local bus to a graphics controller. For these additional reasons, Applicants respectfully request withdrawal of the rejection.

Claim 45

Further, regarding claim 45, whether or not Dye suggests using horizontal and vertical sync signals as a feedback signal is an entirely different question than whether horizontal and vertical sync signals are inherent in a video system. Horizontal and vertical sync signals are control signals in a video system, but they are not necessarily feedback signals provided by a graphics controller in determining when to provide outgoing digital television data over a local bus to the graphics controller. "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient."³⁷

The burden of proof is on the Examiner to provide evidence or reasoning to that effect,³⁸ and the Office Action has not carried that burden of proof. The inherency argument in the Office Action therefore necessarily fails. For these additional reasons, Applicants respectfully request withdrawal of the rejection.

CONCLUSION

Applicants respectfully submit that all issues and rejections have been adequately addressed, that all claims are allowable, and that the case should be advanced to issuance.

³⁶ Col. 13, lines 16-35.

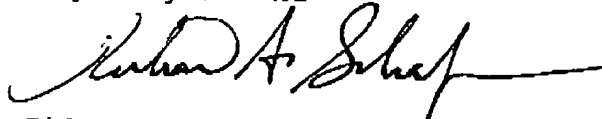
³⁷ MPEP § 2112 (citations omitted).

³⁸ MPEP § 2112.

Serial No. 09/191,629
Reply to Office Action of May 22, 2003

If the Examiner has any questions or wishes to discuss the claims, Applicants encourage the Examiner to call the undersigned or David R. Clonts at the telephone number indicated below.

Respectfully submitted



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